

CLAIMS:

1. A non-return device comprising:

flexible impervious wall members of complementary shapes disposed face-to-face in surface contact so that there is no through passage between them in their normal state and resiliently urged into the said normal state; and

means holding the said walls spaced from one another at an end of the device to define an inlet for ingress of fluid to the interface of said members, whereby in-flowing fluid will force the said members apart to permit flow between them from the inlet and the other end of the device, whereas fluid flow in the opposite direction is prevented by the close surface contact between the members;

wherein the device comprises a tubular body portion surrounding the wall members and a tubular outlet portion extending from an outlet end of the body portion and having a different diameter therefrom, the longitudinal axis of the tubular body portion and the longitudinal axis of the tubular outlet portion being mutually radially offset, so that a wall portion of the body portion is radially congruous with a wall portion of the outlet portion, so as to define a generally uninterrupted flow surface for discharging fluid.

2. A non-return device according to Claim 1, wherein the outlet portion has a smaller diameter than the body portion.

3. A non-return device according to Claim 1 or 2, wherein the body portion and the outlet portion are joined by an intermediate portion which is tapered.

4. A non-return device according to any preceding claim, wherein the body portion has a circular cross-section having a radius r_1 and the outlet portion has a circular cross-section having a radius r_2 , the two radii being radially offset by a distance R ; wherein $R = r_1 - r_2$.

5. A non-return device comprising:

flexible impervious wall members of complementary shapes disposed face-to-face in surface contact, so that there is no through passage between them in a normal state and resiliently urged into the said normal state; and

means holding said wall spaced apart from one another at an end of the device to define an inlet for ingress of fluid to the interface of said members, whereby in-flowing fluid will force said members apart to permit flow between them from the inlet and to the other end of the device, whereas fluid flow in the opposite direction is prevented by the close surface contact between the members;

wherein the device comprises a tubular body portion surrounding the wall members and means are provided for compressing a portion of the wall members situated in a region adjacent the inlet against the said means holding the walls spaced apart from one another and/or compressing said portion of the wall members against the said tubular body portion as the device is attached to a fluid-supplying component, so as to provide a seal.

6. A non-return device according to Claim 5, wherein the means holding the walls spaced apart from one another is axially movable relative to the body portion, so as to enable the compression of the wall members therebetween.

7. A non-return device according to Claim 6 wherein the means holding the walls spaced apart in the form of an annular sleeve which is located coaxially within the tubular body portion.

8. A non-return device according to Claim 7, wherein the annular sleeve has an end face which is adapted to abut the end of a component to which the device is to be attached, thereby experiencing an axial displacement relative to the body portion, as the body portion is axially drawn towards the component during attachment thereto.

9. A non-return device according to Claim 8, wherein the end face comprises a compression seal, so as to effect a seal between the component and the said inlet upon mounting.

10. A non-return device according to Claim 7, 8 or 9, wherein the sleeve is provided at an axial inlet end of the body portion and surrounded by a nut, which can be screwed on to a component to which the device is to be fitted, thereby drawing the body portion axially towards the component.

11. A non-return device comprises:

flexible impervious wall members of complementary shapes disposed face-to-face in surface contact so that there is no through passage between them in their normal state and resiliently urged into the normal state; and

means holding the said walls spaced apart from one another at an end of the device to define an inlet for ingress of fluid to the interface of said members, whereby in-flowing fluid will force said members apart to permit flow between them from the inlet and to the other end of the device, whereas flow in the opposite direction is prevented by the close surface contact between the members; wherein the thickness of the wall members is in the range of 0.3% to 3% of their width, the said width being measured in a direction transverse to the forward fluid flow direction.

12. A non-return device according to Claim 11 wherein the thickness of the wall members is in the range of 0.5% to 2.5% of their width.

13. A non-return device according to Claim 12, wherein the thickness of the wall members is in the range of 1% to 2% of their width.